



Expressions Algebraic

Name: _____

Grade: 7

Date: _____

Simplify, expand, factor, and evaluate algebraic expressions. Show steps and reasoning.

Part 1 · Simplify & Combine Like Terms SIMPLIFY

1. $7y + 2y =$ _____

2. $5a - 3a + 4 =$ _____

3. $6x + 4 - 2x =$ _____

4. $9k - 2k + 5 =$ _____

5. $3m + 7m - 4 =$ _____

6. $8x - 3x + 2x =$ _____

Part 2 · Expand & Factor EXPAND/FACTOR

7. Expand: $2(x + 5) =$ _____

8. Expand: $3(a - 2) =$ _____

9. Factor: $4x + 12 =$ _____

10. Factor: $5y - 15 =$ _____

11. Expand: $2x(3 + x) =$ _____

12. Factor: $6a + 9b =$ _____

Part 3 · Evaluate Expressions EVALUATE

13. $4x + 7$ for $x=3$

14. $2y - 5$ for $y=8$

15. $3a^2$ for $a=4$

16. $5k - 2$ for $k=6$

17. $2m + 3n$ for $m=5, n=2$

18. $(p + 3)/2$ for $p=7$

Part 4 · Error Analysis ERROR

19. Error: $7y + 2y = 9y^2$. Correct & mistake?

(20. Error: Factor $4x + 12$ as $x(4 + 12)$. Correct & why?

(21. Error: Evaluate $3a^2$ for $a=4$ as 12. Correct & why?

Part 5 · Challenge & Reflection CHALLENGE

(22. Expand: $2(x + 3y - 5)$

(23. Factor: $12x + 18y$

(24. Evaluate: $2x^2 + 3x$ for $x=5$

(25. Simplify: $4a - 2(3 - a)$

(26. Reflection: Most helpful strategy? _____

Answer Key

1. $9y$
2. $2a + 4$
3. $4x + 4$
4. $7k + 5$
5. $10m - 4$
6. $7x$
7. $2x + 10$
8. $3a - 6$
9. $4(x + 3)$
10. $5(y - 3)$
11. $6x + 2x^2$
12. $3(2a + 3b)$
13. 19
14. 11
15. 48
16. 28
17. 16
18. 5
19. $9y$ / added not multiplied
20. $4(x + 3)$ / factored out 4 not x
21. 48 / squared first then multiplied
22. $2x + 6y - 10$
23. $6(2x + 3y)$
24. $2(25) + 15 = 50 + 15 = 65$
25. $4a - 6 + 2a = 6a - 6$
26. Varies

Accept equivalent forms. Reflection varies.